



Critical Wear Areas & Vacuum Test Locations



NOTE: OE valves are shown in rest position and should be tested in rest position unless otherwise indicated. Test locations are pointed to with an arrow. Springs are not shown for visual clarity. Low vacuum reading indicates wear and Sonnax parts noted for replacement.

Pump Body • 6L80 Shown Here

Click on Sonnax part numbers to see more information.

Converter Feed Limit Valve

- Converter failure
- Converter codes
- Excessive converter pressure

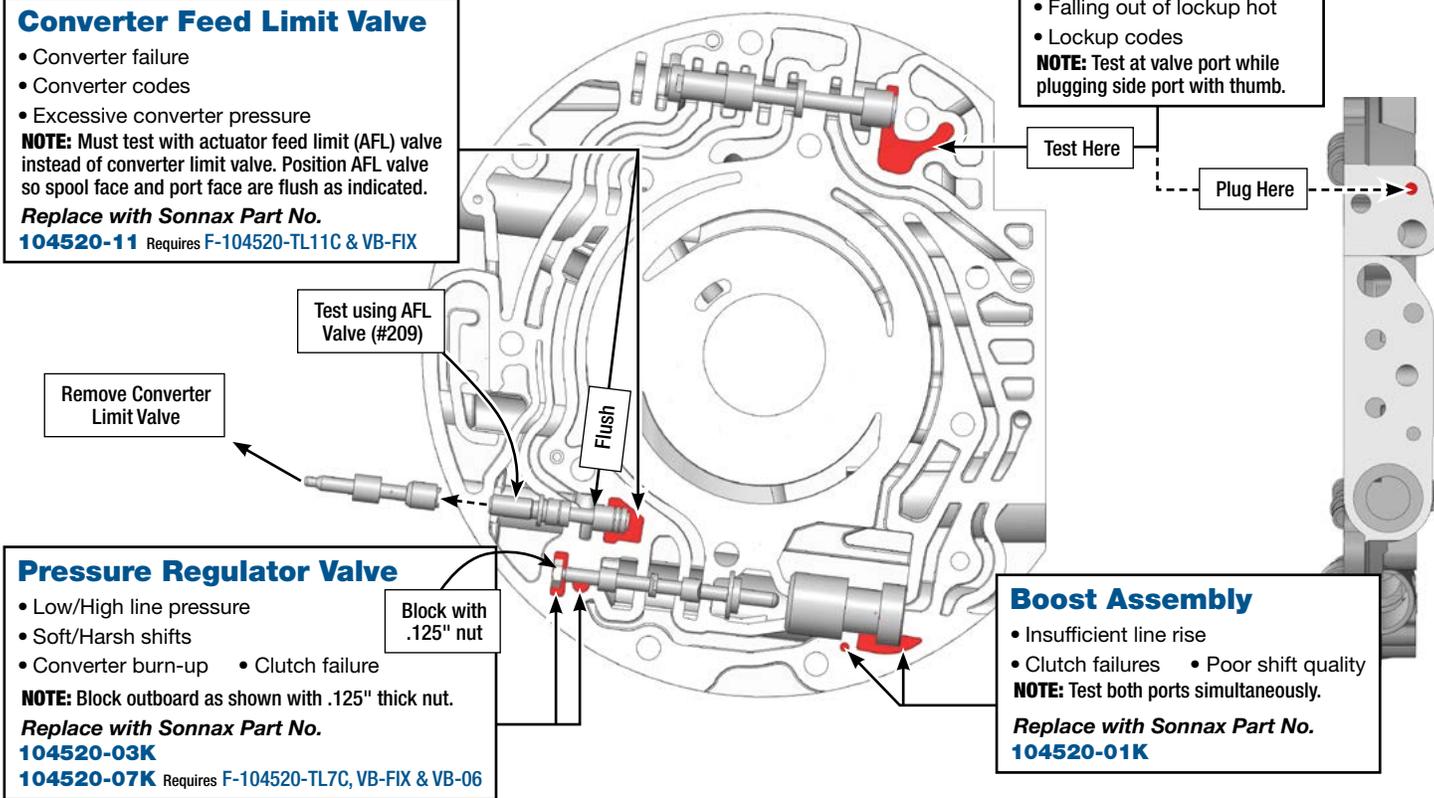
NOTE: Must test with actuator feed limit (AFL) valve instead of converter limit valve. Position AFL valve so spool face and port face are flush as indicated.

Replace with Sonnax Part No.
104520-11 Requires F-104520-TL11C & VB-FIX

TCC Control Valve

- No lockup
- Falling out of lockup hot
- Lockup codes

NOTE: Test at valve port while plugging side port with thumb.



Pressure Regulator Valve

- Low/High line pressure
- Soft/Harsh shifts
- Converter burn-up
- Clutch failure

NOTE: Block outboard as shown with .125" thick nut.

Replace with Sonnax Part No.
104520-03K
104520-07K Requires F-104520-TL7C, VB-FIX & VB-06

Boost Assembly

- Insufficient line rise
- Clutch failures
- Poor shift quality

NOTE: Test both ports simultaneously.

Replace with Sonnax Part No.
104520-01K

Clutch Select Valve #3
Shift complaints

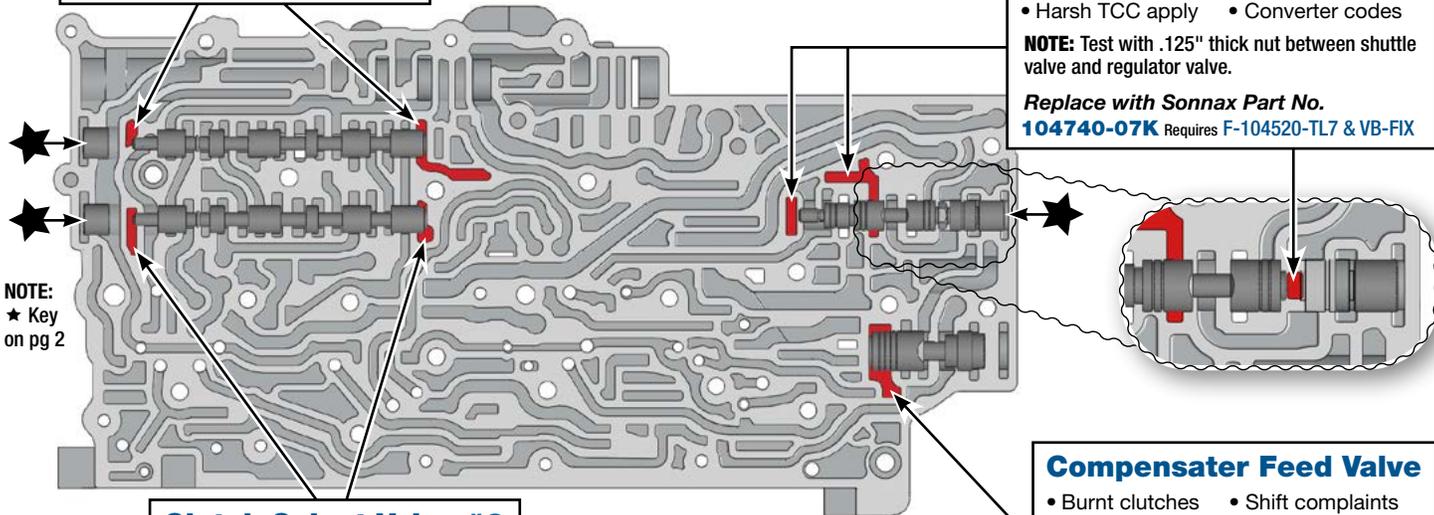
Lower Valve Body 6L80 Shown Here

TCC Regulator Apply Valve

- No TCC/Slip or soft apply
- Harsh TCC apply
- Converter codes

NOTE: Test with .125" thick nut between shuttle valve and regulator valve.

Replace with Sonnax Part No.
104740-07K Requires F-104520-TL7 & VB-FIX



NOTE:
★ Key on pg 2

Clutch Select Valve #2
Shift complaints

Compensator Feed Valve

- Burnt clutches
- Shift complaints

Replace with Sonnax Part No.
104740-09K



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Upper Valve Body • 6L80 Shown Here

Click on Sonnax part numbers to see more information.

1234 Clutch Regulator & Shuttle Valve

- Burned 1234 Clutch
- Shift complaints in 1st, 2nd, 3rd & 4th gear

1234 Clutch Boost Valve

- Burned 1234 Clutch
- Shift complaints in 1st, 2nd, 3rd & 4th gear

Replace with Sonnax Part No. 104740-01 Requires F-104740-TL & VB-FIX

End Plugs

- Burnt clutches/brakes
- Various shift complaints

NOTE: Test end plugs at port between valve and end plug.

Replace with Sonnax Part No. 104740-23K

NOTE: Several Locations = ★

3-5 Reverse Clutch Regulator Valve

- Burned 3-5 Reverse Clutch
- Delayed/No reverse
- 3rd & 5th Shift Complaints

2-6 Clutch Regulator & Gain Valves

- Burned 2-6 clutch
- Shift complaints in 2nd & 6th gear

3-5 Clutch Boost Valve

- Burned 3-5 reverse clutch
- Delayed/No reverse
- Shift complaints in 3rd & 5th gear

Replace with Sonnax Part No. 104740-01

Requires F-104740-TL & VB-FIX

Insets shown with end plugs removed for clarity only. Test with end plugs installed.

456 Clutch Boost Valve

- Burned 456 clutch
- Shift complaints in 4th, 5th & 6th gear

Replace with Sonnax Part No. 104740-01

Requires F-104740-TL & VB-FIX

CBR1/C456 Clutch Regulator Valve

- Burned 456 clutch
- Shift complaints in 4th, 5th & 6th gear

Actuator Feed Limit Valve

- Harsh shifts
- Solenoid codes
- No/Slipping shifts

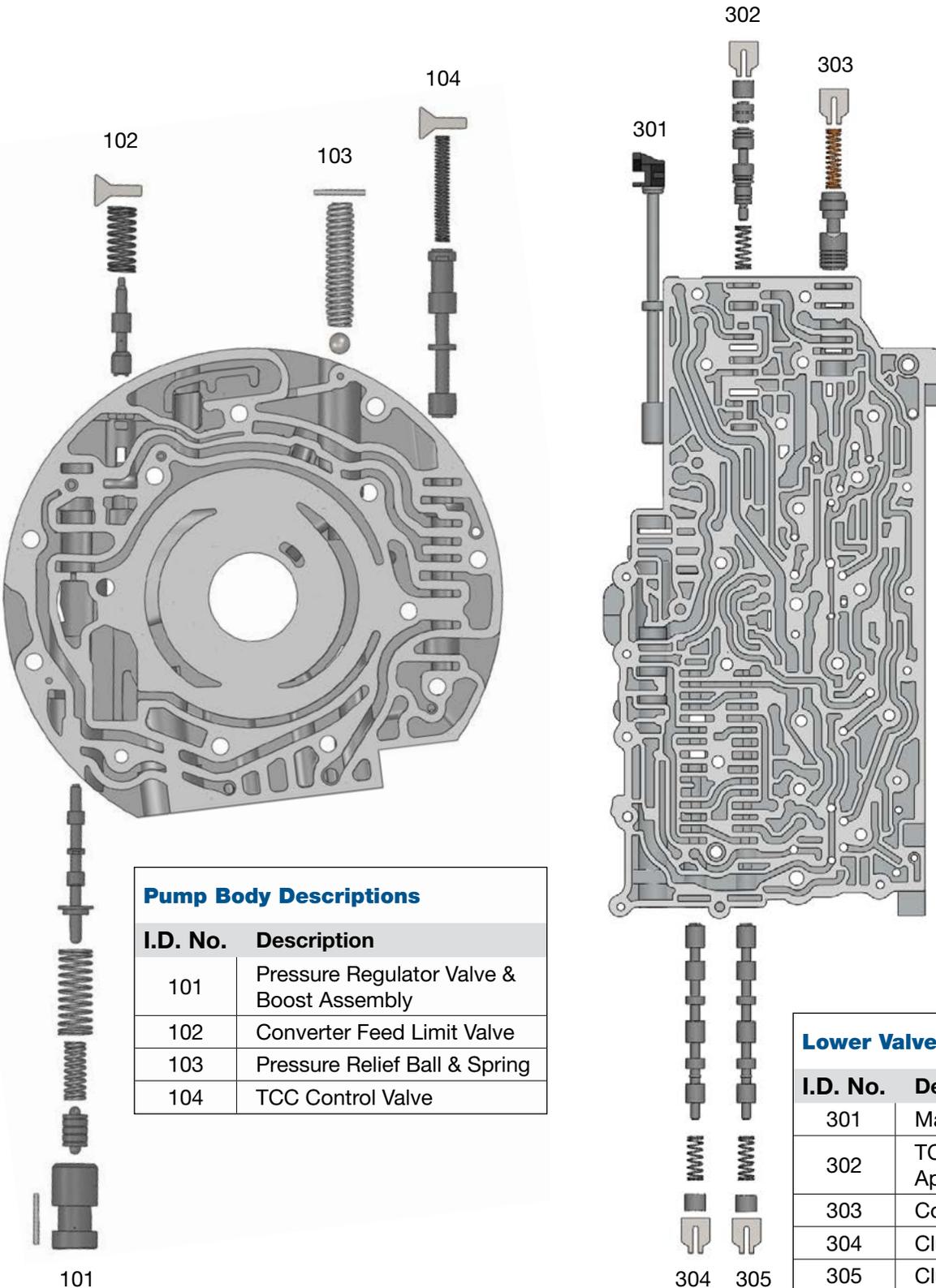
Replace with Sonnax Part No. 104740-12 Requires F-104740-TL12 & VB-FIX



OE Exploded View

NOTE: Depending upon vehicle application, the OE springs shown may not be present.

Pump & Lower Valve Body • 6L80 Shown Here



Pump Body Descriptions

I.D. No.	Description
101	Pressure Regulator Valve & Boost Assembly
102	Converter Feed Limit Valve
103	Pressure Relief Ball & Spring
104	TCC Control Valve

Lower Valve Body Descriptions

I.D. No.	Description
301	Manual Valve
302	TCC Regulator Apply Valve
303	Compensator Feed Valve
304	Clutch Select Valve #3
305	Clutch Select Valve #2

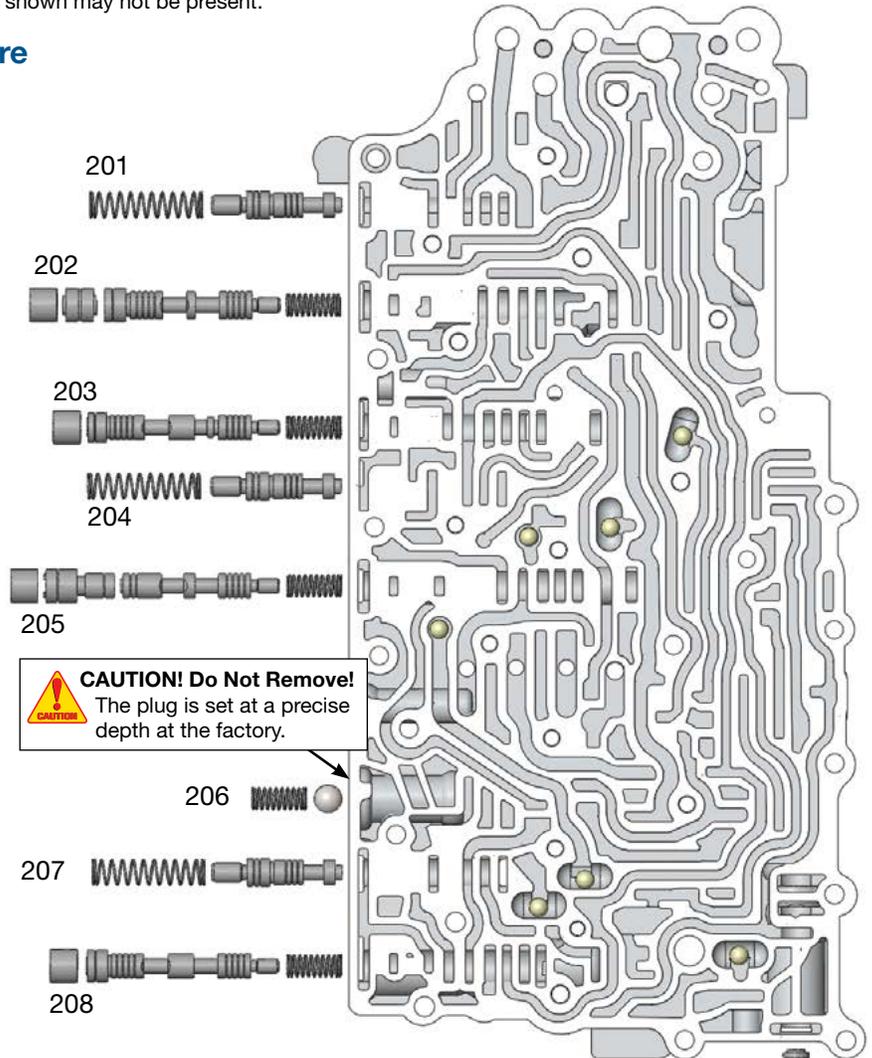


OE Exploded View

NOTE: Depending upon vehicle application, the OE springs shown may not be present.

Upper Valve Body • 6L80 Shown Here

Upper Valve Body Descriptions	
I.D. No.	Description
201	1234 Clutch Boost Valve
202	1234 Clutch Regulator & Shuttle Valve
203	3-5 Reverse Clutch Regulator Valve
204	3-5 Reverse Clutch Boost Valve
205	2-6 Clutch Regulator & Gain Valves
206	Exhaust Backfill Pressure Relief Valve
207	456 Clutch Boost Valve
208	CBR1/C456 Clutch Regulator Valve
209	Actuator Feed Limit Valve



GM 6L45-6L90 Clutch & Solenoid Application Chart

Gear Range	Shift Sol 1	Shift Sol 2	1-2-3-4 CL PC Sol 5 N.L.	2-6 CL PC Sol 4 N.L.	3-5 Rev. CL PC Sol 2 N.H.	Low Rev. 4-5-6 CL PC Sol 3 N.H.	1-2-3-4 Clutch	3-5 Rev. Clutch	4-5-6 Clutch	2-6 Clutch	Low & Rev. Clutch	Low Clutch Sprag
Park	ON	ON	OFF	OFF	OFF	ON					Applied*	
Reverse	ON	OFF	OFF	OFF	ON	ON		Applied			Applied	
Neutral	ON	ON	OFF	OFF	OFF	ON					Applied*	
D-1st Braking	ON	ON	ON	OFF	OFF	ON	Applied				Applied	Holding
D-1st	OFF	ON	ON	OFF	OFF	OFF	Applied					Holding
D-2nd	OFF	ON	ON	ON	OFF	OFF	Applied			Applied		
D-3rd	OFF	ON	ON	OFF	ON	OFF	Applied	Applied				
D-4th	OFF	ON	ON	OFF	OFF	ON	Applied		Applied			
D-5th	OFF	ON	OFF	OFF	ON	ON		Applied	Applied			
D-6th	OFF	ON	OFF	ON	OFF	ON			Applied	Applied		

Notes:
 For shift solenoids 1 and 2, "ON" = Solenoid Energized (Pressurized), "OFF" = Solenoid De-energized (No Pressure).
 For pressure control (PC) solenoids, "ON" = Pressurized, "OFF" = No Pressure.
 * = Applied with No Load.

